

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (canceled)
2. (currently amended) The method ~~use~~ according to claim ~~46~~,
~~characterized in that wherein~~
during growth, the intervertebral disk cells isolated from said degenerate prolapsed intervertebral disk tissue are cultured in a cell culture medium including 1-20% of added autologous serum, wherein the ratio of alpha-MEM medium and HAM-F12 medium is between 2:1 and 1:2, at 36.8-37°C in air containing 5% carbon dioxide and having a humidity of 85-95%.
3. (currently amended) The method ~~use~~ according to ~~any of the preceding claims~~ 13,
~~characterized in that wherein~~
the isolated intervertebral disk cells, following growth thereof in monolayer, are cultured in a cell culture medium including 1-20% of added autologous serum, wherein the ratio of alpha-MEM medium and HAM-F12 medium is between 2:1 and 1:2, at 36.8-37°C in air containing 5% carbon dioxide and having a humidity of 85-95%, thereby becoming capable of differentiating, forming matrix structures comprising specific intervertebral disk matrix proteins.

4. (currently amended) The method use according to ~~any of the preceding claims 6,~~
~~characterized in that wherein~~
the isolated intervertebral disk cells, following growth thereof in monolayer, are frozen in a solution of 10% DMSO, 20% serum and 70% culture medium, followed by thawing, so that their properties with respect to the synthesis of specific matrix components and markers remain unchanged and tissue structures consisting of intervertebral disk-specific matrix proteins are formed *in vitro* and *in vivo*.
5. (currently amended) The method use according to ~~any of the preceding claims 13,~~
~~characterized in that wherein~~
the ~~cells isolated from the intervertebral disk tissue~~ cell transplants are cultured in a culture vessel with hydrophobic surface and tapering bottom, ~~thereby obtaining three-dimensional cell aggregates.~~
6. (currently amended) A method for the production of intervertebral disk cell transplants, ~~characterized in that wherein~~
vital intervertebral disk cells are isolated from at least one of prolapsed-degenerate prolapsed intervertebral disk tissue and/or affected intervertebral disk tissue and cultured as monolayer three-dimensional aggregates with addition of autologous serum, thereby obtaining three-dimensional intervertebral disk tissue cell transplants having cells which are capable of proliferation, migration and differentiation.
7. (currently amended) The transplant according to claim 15 as A an intervertebral disk tissue regeneration agent, ~~which can be obtained by isolating cells from degenerate intervertebral disk tissue, followed by culturing, harvesting and using the cells as an intervertebral disk regeneration agent.~~

8. (currently amended) The transplant agent according to ~~the preceding claim 15,~~
~~characterized in that wherein~~
multiple tissues are fused with each other.
9. (currently amended) The transplant agent according to ~~any of the preceding claims 15,~~
~~characterized in that wherein~~
the transplant agent is a mixture of cultured cells formed by a first method wherein vital intervertebral disk cells are isolated from at least one of degenerate prolapsed intervertebral disk tissue and affected intervertebral disk tissue and cultured as monolayer with addition of autologous serum, thereby obtaining intervertebral disk cell transplants having cells which are capable of proliferation, migration and differentiation, and said three-dimensional tissue formed by a second method wherein intervertebral disk cell transplants produced according to the first method are cultured with addition of autologous serum, thereby obtaining three-dimensional intervertebral disk tissue transplants consisting of internal vital, differentiated cells having an extracellular matrix, and a peripheral proliferation zone.
10. (currently amended) The transplant agent according to ~~any of the preceding claims 15,~~
~~wherein~~
~~which agent can be obtained by providing the intervertebral disk cell transplants in a vessel with tapering bottom and or the intervertebral disk tissue transplants aggregates are provided as injection solution in a syringe, for transplantation and transplanting them into the intervertebral disk to be treated, namely, on the side opposite to that of the first surgery of the intervertebral disk, by means of injection us having a puncture needle with slanted opening.~~

11. (currently amended) A method Use of for testing active substances,
wherein comprising the step of using the transplants produced agents according to either a
first method wherein vital intervertebral disk cells are isolated from at least one of
degenerate prolapsed intervertebral disk tissue and affected intervertebral disk tissue and
cultured as monolayer with addition of autologous serum, thereby obtaining intervertebral
disk cell transplants having cells which are capable of proliferation, migration and
differentiation, or a second method wherein intervertebral disk cell transplants produced
according to the first method are cultured with addition of autologous serum, thereby
obtaining three-dimensional intervertebral disk tissue transplants consisting of internal
vital, differentiated cells having an extracellular matrix, and a peripheral proliferation
zone any of claims to 10 are used in testing active substances.
12. (currently amended) A cell-therapeutic formulation, comprising transplants intervertebral
disk regeneration agents in accordance with any of claims 15 to 10.
13. (new) A method for the production of intervertebral disk tissue transplants,
wherein

the intervertebral disk cell transplants produced according to claim 6 are cultured with
addition of autologous serum, thereby obtaining three-dimensional intervertebral disk
tissue transplants consisting of internal vital, differentiated cells having an
extracellular matrix, and a peripheral proliferation zone.
14. (new) The method according to claim 6,
wherein

anulus fibrosus cells and nucleus pulposus cells are isolated and cultured in a mixture.

15. (new) Transplant produced according to at least one of the methods being: a first method wherein vital intervertebral disk cells are isolated from at least one of degenerate prolapsed intervertebral disk tissue and affected intervertebral disk tissue and cultured as monolayer with addition of autologous serum, thereby obtaining intervertebral disk cell transplants having cells which are capable of proliferation, migration and differentiation; and a second method wherein intervertebral disk cell transplants produced according to the first method are cultured with addition of autologous serum, thereby obtaining three-dimensional intervertebral disk tissue transplants consisting of internal vital, differentiated cells having an extracellular matrix, and a peripheral proliferation zone .

16.(new) A method for treating affected intervertebral disks,
wherein
to the intervertebral disk of a patient in need of such treatment the transplant according to claim 15 is administered by injection.